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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,216	11/25/2003	Toshiya Yuasa	03560.003402	4985
5514 7590 12/27/2006 FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			EXAMINER CORDRAY, DENNIS R	
			ART UNIT	PAPER NUMBER
			1731	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		12/27/2006	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

10/720,216

Applicant(s)

YUASA, TOSHIYA

Examiner

Dennis Cordray

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 3-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Response to Arguments*

Applicant's arguments, filed 10/20/2006, with respect to the rejection(s) of claim(s) 3 and 4 under 35 U.S.C. 102(a or e) have been fully considered and are persuasive. Struck et al does not disclose a recording sheet comprising the disclosed copolymer. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made as detailed below.

Applicant's arguments with respect to the rejection(s) of claim(s) 3-7 under 35 U.S.C. 103(a) have been fully considered and are not persuasive.

Applicant argues on p 10 that either Kawai et al or the combination of Kawai et al and Ali et al requires a crosslinking monomer to be present and that the disclosed crosslinking monomers do not correspond to either of the claimed monomers represented by formulae (1) and (2). Note that the claim language is open, reciting a sizing agent comprising a vinyl copolymer having repeat units of general formulae (1) and (2). The word "having" is considered by the Examiner to be equivalent to "comprising" and thus does not prohibit other monomeric units (i.e.-a crosslinking monomer) from being present. The referenced art meets the limitations of the claim by disclosing a polymer comprising at least a cationic monomer and a hydrophilic monomer and a ratio of the cationic to hydrophilic monomers that overlaps the claimed ratio.

In regard to combining the disclosures of Kawai et al and Ali et al, Ali et al is only used to teach that it is known in the art that hydroxy alkyl(meth)acrylates and alkoxy

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alkyl(meth)acrylates are hydrophilic monomers used in copolymers used in ink receptive coatings for recording sheets.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Struck et al (US 2003/0212183).

Struck et al discloses a dispersion comprising a cationic copolymer dispersant that is added to the furnish as part of a retention aid in a papermaking process (Abstract; p 1, par 2). The cationic copolymer dispersant comprises a cationic vinyl monomer (m3) (p 1, par 11). Preferred monomers are (meth)acryloyl-oxyethyl-trimethylammonium chloride (p 2, par 27 to p 3, par 28), which is described by formula (1) of the instant invention. The copolymer also comprises a second monomer (m4), preferred examples of which are methoxypolyethylene glycol methacrylate, poly(ethylene glycol) methyl ether acrylate, di(ethylene glycol) ethyl ether (meth)acrylate, ethylene glycol methyl ether (meth)acrylate, which are described by formula (2) of the instant invention (p 1, par 11; p 3, par 29). The copolymer comprises 80 to 99.9 mole percent of monomer m3 and 0.1 to 20% of monomer m4 (p 3, pars 28-29). The weight average molecular weight of the copolymer is from 20,000 to 5,000,000

g/mole (p 3, par 30). The disclosed copolymer significantly overlaps and thus anticipates the claimed copolymer.

Polymeric additives to papermaking can simultaneously serve multiple purposes, thus the polymer of Struck et al is capable of serving as a dispersant as well as an engine sizing agent.

Struck et al does not explicitly disclose a paper comprising the polymer. Struck et al does disclose a process for making paper wherein the copolymer is added to a papermaking suspension that contains fibers and fillers (pp 3-4, par 38). Applicant admits in the instant Disclosure that a plain paper is a recording medium (p 20, lines 1-2). It would have been obvious to one of ordinary skill in the art to make a paper by a method comprising adding the copolymer of Struck et al to the fibrous suspension and to use the paper as a recording paper.

Claims 3-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawai et al (6465078) in view of Ali et al (5712027).

Kawai et al discloses a recording sheet having an ink absorbing layer that comprises a cationic polymer having a cationic monomer, a crosslinking monomer and a hydrophilic monomer (Abstract; col 4, lines 1-9). The cationic monomer can be dimethylaminoethyl (meth)acrylate or other di-C<sub>1-4</sub> alkylamino-C<sub>1-3</sub> alkyl (meth)acrylates quaternized with methyl chloride, which are described by formula (1) of the instant invention (col 4, lines 15-37). The hydrophilic monomers include, but are not limited to, hydroxyethyl (meth)acrylate, diethylene glycol mono(meth)acrylate and triethylene

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glycol mono(meth)acrylate (col 5, lines 20-45). The cationic monomer can be present in an amount of 0.1 to 50% of the monomers and the hydrophilic monomer can be present in an amount of 0 to 50% of the total monomers (col 6, lines 16-30), thus the ratio of cationic to hydrophilic monomers [analogous to the claimed ratio (i):(ii)] can be 0.2:100 to 100:0. The molecular weight of the copolymer can be from 2,000 to 1,000,000 and preferably from 10,000 to 500,000 (col 7, lines 1-4). The ink absorbing layer can be formed by coating the substrate (base paper) with the coating composition comprising the above copolymer (sizing agent) in a suitable solvent, such as water (col 12, lines 48-52). An example is given of a coating solution containing 86.5 parts (30 parts nonvolatile acrylate copolymer) and 700 parts other aqueous solution, or 3.8% by weight (col 14, lines 31-37). Other examples of coating solutions are disclosed, which contain the acrylate copolymer in an amount from 3 to 7.7% by weight (col 14, line 45 to col 15, line 24).

Kawai et al does not disclose a hydrophilic monomer having an alkoxy polyethylene glycol group.

Ali et al discloses a substrate having an ink receptive coating comprising a copolymer having hydrophilic monomers and teaches that hydrophilic monomers include hydroxy alkyl(meth)acrylates and alkoxy alkyl(meth)acrylates (Abstract; col 11, lines 38-46; col 12, lines 21-22 and 65-67).

The art of Kawai et al, Ali et al and the instant invention are analogous as pertaining to coatings applied to printing or recording sheets. It would have been obvious to one of ordinary skill in the art to use an alkoxy alkyl(meth)acrylate (described

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by formula 2 of the instant invention) as the hydrophilic monomer in the copolymer of Kawai et al in view of Ali et al as a functionally equivalent option.

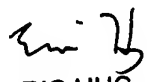
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Cordray whose telephone number is 571-272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
DRC

  
ERIC HUG  
PRIMARY EXAMINER